

ABSTRACT OF THE DISCLOSURE

Cu interconnections embedded in an interconnection slot of a silicon oxide film are formed by polishing using CMP to improve the insulation breakdown resistance of a copper interconnection formed using the Damascene method, and after a post-CMP cleaning step, the surface of the silicon oxide film and Cu interconnections is treated by a reducing plasma (ammonia plasma). Subsequently, a continuous cap film (silicon nitride film) is formed without vacuum break.